

ANALYSIS OF TRYPTOPHAN RELATED METABOLITES

Description: LC-MS/MS method for the sensitive detection and quantification of tryptophan and its related metabolites. The detection limits depend on matrix type and input quantity. Samples are extracted and measured by a Waters I-Class Plus LC System paired with a Sciex 6500+ QTRAP.

Analytes are reported as μM or pmol/mio cells or pmol/mg tissue.

Container: Eppendorf Tube or equivalent.

Normal Volume: Plasma / cell culture medium ($100 \mu\text{l}$); Tissue (25 mg)¹; Cells (1 mio).

Minimal Volume: Plasma / cell culture medium ($25 \mu\text{l}$); Tissue (10 mg)¹; Cells (0.5 mio).

Sample Collection: Please see our detailed sample collection protocols.

Quantification: Absolute, using a >6 point calibration curve and $r^2 > 98\%$.

Please note: For human material, note any known presence of infectious agents

List of analytes reported

(D- and L- enantiomers are not distinguished)

Compound name	Identifier	Formula	Monoisotopic mass
2-Oxo-4-methylthiobutanoic acid	HMDB0001553	C5H8O3S	148.02
3-Hydroxy-Anthranilic acid	HMDB0001476	C7H7NO3	153.04
3-Hydroxy-Kynurenine	HMDB0000732	C10H12N2O4	224.08
4-Hydroxyphenylpyruvic acid	HMDB0000707	C9H8O4	180.04
5-Hydroxyindole-3-acetic acid	HMDB0000763	C10H9NO3	191.06
Anthranilic acid	HMDB0001123	C7H7NO2	137.05
Hydroxyphenyllactic acid	HMDB0000755	C9H10O4	182.06
Indole 3 carboxaldehyde	HMDB0029737	C9H7NO	145.05
Indole 3 pyruvic acid	HMDB0060484	C11H9NO3	203.06
Indole-3-acetic acid	HMDB0000197	C10H9NO2	175.06
Indole-3-carboxylic acid	HMDB0003320	C9H7NO2	161.05
Indole-3-lactic acid	HMDB0000671	C11H11NO3	205.07
Indole-3-propionic acid	HMDB0002302	C11H11NO2	189.08

¹ Pulverized/crushed (deep-frozen) and exact weight noted

Kynurenic acid	HMDB0000715	C10H7NO3	189.04
Kynurenine	HMDB0000684	C10H12N2O3	208.08
Nicotinamide	HMDB0001406	C6H6N2O	122.05
Phenylpyruvic acid	HMDB0000205	C9H8O3	164.05
Serotonine	HMDB0000259	C10H12N2O	176.09
Tryptamine	HMDB0000303	C10H12N2	160.1
Tryptophan	HMDB0000929	C11H12N2O2	204.09
Xanthurenic acid	HMDB0000881	C10H7NO4	205.04

LC conditions

Column	Waters HSS T3 150 x 2.1mm
Temperature	35° C
Mobile phase A	Water + 0.1% formic acid
Mobile phase B	CAN + 0.1% formic acid
Flow	0.45 ml/min

Notes

Samples need to be snap-frozen and stored at -80°C.

Variations in sampling procedures will affect metabolite measurements.

¹ Pulverized/crushed (deep-frozen) and exact weight noted